WOODLAND TRUST

Nor Wood, Cook Spring & Owler Car

Management Plan

2018-2023

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MAPS

THE WOODLAND TRUST

INTRODUCTION

The Trust's corporate aims and management approach guide the management of all the Trust's properties, and are described on Page 4. These determine basic management policies and methods, which apply to all sites unless specifically stated otherwise. Such policies include free public access; keeping local people informed of major proposed work; the retention of old trees and dead wood; and a desire for management to be as unobtrusive as possible. The Trust also has available Policy Statements covering a variety of woodland management issues.

The Trust's management plans are based on the identification of Key Features for the site and setting objectives for their management. A monitoring programme (not included in this plan) ensures that these objectives are met and any necessary management works are carried out.

Any legally confidential or sensitive species information about this site is not included in this version of the plan.

PLAN REVIEW AND UPDATING

The information presented in this Management plan is held in a database which is continuously being amended and updated on our website. Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.
Please either consult The Woodland Trust website www.woodlandtrust.org.uk or contact the Woodland Trust (wopsmail@woodlandtrust.org.uk) to confirm details of the current management programme.

There is a formal review of this plan every 5 years and a summary of monitoring results can be obtained on request.

WOODLAND MANAGEMENT APPROACH

The management of our woods is based on our charitable purposes, and is therefore focused on improving woodland biodiversity and increasing peoples' understanding and enjoyment of woodland.

Our strategic aims are to:

- Protect native woods, trees and their wildlife for the future
- Work with others to create more native woodlands and places rich in trees
- Inspire everyone to enjoy and value woods and trees

All our sites have a management plan which is freely accessible via our website www.woodlandtrust.org.uk. Our woods are managed to the UK Woodland Assurance Standard (UKWAS) and are certified with the Forest Stewardship Council® (FSC®) under licence FSC-C009406 and through independent audit.

In addition to the guidelines below we have specific guidance and policies on issues of woodland management which we review and update from time to time.

We recognise that all woods are different and that the management of our sites should also reflect their local landscape and where appropriate support local projects and initiatives. Guidelines like these provide a necessary overarching framework to guide the management of our sites but such management also requires decisions based on local circumstances and our Site Manager's intimate knowledge of each site.

The following guidelines help to direct our woodland management:

1. Our woods are managed to maintain their intrinsic key features of value and to reflect those of the surrounding landscape. We intervene when there is evidence that it is necessary to maintain or improve biodiversity and to further the development of more resilient woods and landscapes.
2. We establish new native woodland using both natural regeneration and tree planting, but largely the latter, particularly when there are opportunities for involving people.
3. We provide free public access to woods for quiet, informal recreation and our woods are managed to make them accessible, welcoming and safe.
4. The long term vision for our non-native plantations on ancient woodland sites is to restore them to predominantly native species composition and semi-natural structure, a vision that equally applies to our secondary woods.
5. Existing semi-natural open-ground and freshwater habitats are restored and maintained wherever their management can be sustained and new open ground habitats created where appropriate.
6. The heritage and cultural value of sites is taken into account in our management and, in particular, our ancient trees are retained for as long as possible.
7. Woods can offer the potential to generate income both from the sustainable harvesting of wood products and the delivery of other services. We will therefore consider the potential to generate income from our estate to help support our aims.
8. We work with neighbours, local people, organisations and other stakeholders in developing the management of our woods. We recognise the benefits of local community woodland ownership and management. Where appropriate we allow our woods to be used to support local woodland, conservation, education and access initiatives.
9. We use and offer the estate where appropriate, for the purpose of demonstration, evidence gathering and research associated with the conservation, recreational and sustainable management of woodlands. In particular we will develop and maintain a network of long-term monitoring sites across the estate.
10. Any activities we undertake will conform to sustainable forest management principles, be appropriate for the site and will be balanced with our primary objectives of enhancing the biodiversity and recreational value of our woods and the wider landscapes.

SUMMARY

This public management plan briefly describes the site, specifically mentions information on public access, sets out the long term policy and lists the Key Features which drive management actions. The Key Features are specific to this site – their significance is outlined together with their long (50 year+) and short (5 year) term objectives. The short term objectives are complemented by a detailed Work Programme for the period of this management plan. Detailed compartment descriptions are listed in the appendices which include any major management constraints and designations. A short glossary of technical terms is at the end. The Key Features and general woodland condition of this site are subject to a formal monitoring programme which is maintained in a central database. A summary of monitoring results is available on request.

1.0 SITE DETAILS

Site name:	Nor Wood, Cook Spring & Owler Car
Location:	Dronfield
Grid reference:	SK373803, OS 1:50,000 Sheet No. 110
Area:	30.57 hectares (75.54 acres)
Designations:	Ancient Semi Natural Woodland, Planted Ancient Woodland Site, Site of Local Nature Conservation Importance, Site of Special Scientific Interest, Tree Preservation Order

2.0 SITE DESCRIPTION

2.1 Summary Description

This semi-natural ancient woodland has a rich diversity of broadleaf trees and is brimming with wildlife. But look beyond its wild and natural appearance, and you'll find evidence of a fascinating industrial past. With easy access from the southern edge of the city of Sheffield, it's the perfect place to find some respite from busy urban life.

2.2 Extended Description

The Woodland Trust purchased Nor, Cookspring and Owler Car woods (30.80 hectares) from the Sitwell Estate in 1988. The woods form part of a larger, contiguous complex of woodlands (including Coalpit Wood, Long Wood, Newfield Spring Wood, Bridle Road Wood & Whinacre Wood SSSI) much of which is now managed for nature conservation and/or public access objectives. Despite having a distinctly rural feel, the woodland complex is within two kilometres of the southern edge of the city of Sheffield (Jordanthorpe) and is well used by local people for informal recreation. Part of Cookspring Wood is designated as SSSI as it represents one of the least modified areas of oak woodland in Derbyshire.

The woodlands are best categorised as ancient semi-natural woodland, although in the last two centuries the site has undergone considerable modification from surface mining and successive

felling and subsequent re-planting with non-native species, in particular beech (Fagus sylvatica), larch (Larix sp.), red oak (Quercus rubra), maple and sycamore (Acer pseudoplatanus). However, the woodland retains a varied ground flora, and the majority of tree species present today are native, including excellent examples of oak (Quercus petraea, Q. robur and the hybrid Q. rosacea), ash (Fraxinus excelsior) high forest with wild cherry (Prunus avium), holly (Ilex aquilifolium) and hazel (Corylus avellana) understory. The woods are cited in Derbyshire County Council's Wildlife Sites Register (Anon, 1995), and as a Site of Nature Conservation Importance (SINC) in N.E Derbyshire's Local Plan. They are also listed in English Nature's Inventory of Ancient Woodland (Bevan et al, 1992).

The woodlands appear on Burdetts's map of Derbyshire, 1791 (copy in Rotherham & Avison, 1988) and successive maps thereafter. We can surmise from this that the areas currently managed by the Trust have almost certainly had continuous woodland cover since 1600, and are therefore ancient woodlands.

The woodlands have had a long history of human use. Owler Car for example, contains at least 25 White Coal Hearths (Q pits), indicating the wood was used in the last century for lead smelting. There are also several other pits which appear to have been used for domestic quarrying and 24 'platforms' which may have been associated with charcoal production for the smelting of iron-ore. Other evidence of human use comes from the survival of several coppice stools, suggesting that cut coppice was used for charcoal burning. There are also a number of linear features in the woodlands, possibly former drainage networks, and what seems to be an ancient woodbank on the upper eastern edge of Owler Car Wood (see Rotherham & Avison, 1998).

In recent years the woodlands have been used for the production of timber, although many of the areas planted with conifers have not been well managed and have failed to produce quality timber crops.

Public access to the site is good with a network of public and permissive paths across the whole site. Access can also be gained via a sensible circular permissive bridleway route which has been established, following route improvements providing a link with Long Wood to the north and Owler Carr Lane to the south. For descriptions and restrictions on management access see Legal Section.

The Moss brook flows from the lower edges of the eastern flank of the Pennines, eastwards toward the River Rother flood plain beyond the village of Eckington, the parish in which the woods are situated. The valley side on which the woods lie falls from approximately 225m above ordnance datum (AOD) to approximately 100m AOD. From the ancient Owler Car Lane (170m AOD) the wood falls via a series of concave slopes (due to resistant sandstone), and flatter areas of more easily weathered shales, to the stream bottom approximately 500m to the north.

The underlying geology of the area is typical of the Lower Coal Measures Series, with alternating beds of sandstones, and shales and mudstones, irregularly interspersed with coal seams of varying depth. The soils reflect the underlying bedrock with acidic soils over the sandstone and neutral to base rich soils associated with the shales and mudstones. Hillside spring-lines and seeps appear as groundwater issues at the base of the more porous sandstone layers.

The ground flora of the woodlands is often dominated by one or two of the following species: bramble (Rubus fruticosus agg.), ferns (Dryopteris dilitata, D. felix-mas and Athyrium felix femina),

bluebell (Hyacinthoides non-scripta) and the grass Holcus mollis. With these dominants a wide variety of characteristic woodland species have been recorded including moderate to strong ancient woodland indicators such as dogs mercury (Mercurialis perennis), wood melick (Melica uniflora), wood millet (Millium effusum), smooth stalked sedge (Carex laevigata), remote sedge (Carex remota) and barren strawberry (Potentilla sterillis). A more detailed plant list with compartment descriptions is given in Rotherham & Avison, 1998. Detailed lists of fungi, lichens and bryophyte flora are unavailable.

At least 25 species of birds have been recorded from the woodlands, including a good population of nuthatch and the occasional turtle dove. Song thrush, great spotted woodpecker, blackcap and goldfinch are relatively common. The wood is home to the usual range of common mammals.

No detailed survey of invertebrates has been carried out but given the history of the site this could prove to be a valuable exercise.

3.0 PUBLIC ACCESS INFORMATION

3.1 Getting there

By bus
The nearest bus station is on Eckington Road (B6056).

By train
The nearest station is in Dronfield, south of Sheffield. Coal Aston is one mile (1.6km) from Dronfield station.

By car
Leave the M1 motorway at junction 29 and follow the A617 to Chesterfield (4 miles/6.4km). At the roundabout, take the fourth exit (A61 signposted Sheffield). Continue on the A61 by taking the second exit at the Tesco roundabout, and the third exit at the Little Chef roundabout. At the next roundabout (around 4 miles/6.4km), take the second exit (B6057), and at the next roundabout, take the third exit (B6158, Dyche Lane) towards Coal Aston. Access is off the B6056 from Coal Aston/Dronfield to Owler Car Lane.

There is limited parking for one or two cars at the entrance off Owler Car Lane.

For up-to-date information on public transport, visit traveline.org.uk or phone 0871 200 2233.

3.2 Access / Walks

An extensive network of paths links with other paths over neighbouring land and on to the city of Sheffield. A circular bridleway provides a link between Long Wood to the north and Owler Carr Lane to the south. Paths are earth surfaced and can be slippery and muddy when wet. Some are steep, especially in the section that leads down from the parking at Owler Carr Lane. Because of this, the woods are not accessible to wheelchairs.
There are a total of 14 entrances, including:
• from Owler Car Lane, off the B6056 in Coal Aston
• from the south across the footpaths over open fields into Nor Wood
• from Long Wood to the east, via bridges over Moss stream, which forms the northern border of the Trust-owned woodland.

The following circular walk has some short but steep ascents: Ridgeway - Birley Hay - Troway - Owler Car - Newfield Spring Wood - Carterhall Wood – Ridgeway (8 miles/12.9 km)

4.0 LONG TERM POLICY

The long term vision for Nor, Cookspring and Owler Car is to return the woodland to an uneven aged, broadleaved, high forest woodland, retaining and enhancing the botanical, faunal and historic interest of the site. Specifically this will involve:

- Phased removal of non-native conifers, (keeping a few as specimen trees) through PAWS restoration. Where native broadleaves exist within a matrix with conifers, the non-native trees will be removed to favour native species through thinning and selective thinning. Where broadleaves are largely absent, phased thinning of conifers will open up the canopy to allow natural regeneration of broadleaves which, it is intended, will eventually replace the conifers as the main canopy trees. Some thinning of broadleaves may also be appropriate and in the long term it is intended to significantly reduce the percentage cover of sycamore, beech and red oak (to less than 50% of the total trees) on the site, although it is accepted that complete eradication of these species is unlikely and undesirable. Canopy cover will be maintained outside those areas which are to be managed as rides.

- Care will be taken when carrying out silivicultural operations and other management operations not to damage the historic features of the site.

- Minimum intervention in targeted areas of the woodland, primarily the SSSI and other significant areas of NVC W10 . These will be in areas currently dominated by native broadleaves. It is hoped that these areas will require little silvicultural or other management and will develop into a self-sustaining systems, shaped by natural processes alone.

- Dead wood, wet areas and small open glades will be retained wherever possible in all areas to improve the provision of microhabitats.

- Maintenance and upgrading of a network of paths and rides to allow quiet, informal recreation. Any continuation of renewing the surfacing of public and bridle paths must not detract from the character of the woodlands or compromise the biodiversity interest.

- The Trust will continue to promote the woodland amongst people in the region and members nationally so long as the primary objective of 'no further loss of ancient woodland' (in terms of both quality and quantity) is compromised. Improvement of drainage along paths must not damage historic features or populations of notable plant and animal species.

This long term vision for Nor Cookspring and Owler Car is in line with the aims in the Trust's Action Plan 'Keeping Woodland Alive'.

5.0 KEY FEATURES

The Key Features of the site are identified and described below. They encapsulate what is important about the site. The short and long-term objectives are stated and any management necessary to maintain and improve the Key Feature.

5.1 Ancient Semi Natural Woodland

Description

Much of this dry oak woodland community is confined to Cookspring Wood and Nor Wood, with small outlying patches in Owler Car. In places, the ground flora is species rich (see summary description), often with extensive carpets of bluebell (Hyacinthoides non-scripta), wood sorrel (Oxalis acetosella) and sweet woodruff (Galium odoratum). These areas of W10 are true remnant ancient woodland with 'largely undisturbed ground floras and relatively unmodified canopies' (SSSI Notification 1993).

This key feature contains the following historic and conservation features:
C1 Streamsides (important for flora and fauna)
C2 Ancient coppice stools
H1 Q pits or white coal hearths
H2 Charcoal platforms
H3 Stone getting pits

Significance

The protection and management of ancient woodland is important for many reasons: as a place for people to experience direct contact with nature, as a place where a range of specialised plants and animals can thrive, as a link to our natural and cultural heritage and as valuable part of the landscape of the British countryside and the wider environment. These oak dominated communities are particularly important as they represent a continuation of the trees and ground flora which thrived in this area in ancient times, possibly as far back as many thousands of years. They also contain many locally uncommon and specialised woodland plants, and in places where there is a good understory of hazel and holly, provide valuable cover for breeding birds. These areas also enhance the aesthetic appeal of the woodlands, being as they are very different in character to the beech and conifer stands characteristic of the remainder of the woods (see also under other Key Features for landscape and public access importance). As with the beech dominated community, the oak woodland is also important in that it is linked to a larger network of semi-natural ancient woodland to the north, making the site more ecologically robust and less likely to suffer localised species extinctions.

Opportunities & Constraints

Constraints:
Sycamore and beech are spreading in many areas and, without a programme of removal, may begin to establish in the oak dominated stands.
Oak regeneration is poor in most areas constraining efforts to allow natural development of the W10e stands. Although this may be the result of a run of poor seed years rather than any long term problem, and oak regeneration at low levels can be seen in many places.

Opportunities:
There are opportunities for minimum intervention management in future years should the sycamore and beech eradication be successful. However, given that the adjacent stands are dominated by beech there may always be an ongoing, minimal level of beech control.

There are opportunties for re-stocking natural glades with oak grown from acorns in the wood. This may not be required if in future years oak shows signs of regenerating naturallly.

Factors Causing Change

Invasive Sycamore, Invasive Beech, Conversion of W15 beech dominated areas to W10 oakwood

Long term Objective (50 years+)

The long term vision for this community is to create an uneven aged, native, broadleaved, high forest woodland, retaining and enhancing botanical, faunal and historic interest.

Oak and other native broadleaves which currently make up the bulk of the stand will be retained and encouraged to develop into a self-sustaining high forest. Some manipulation of the stand may be necessary to open up the canopy gaps thereby facilitating natural regeneration to diversify stand structure. Beech and sycamore will be targeted for felling as priority and over a period of 50 years completely removed from the W10 areas. In future years the W10 areas will be gradually extended at their boundary into areas currently dominated by W15 beech woodland.

Re-planting with local provenance native trees may be required in some areas in the future and will be reviewed in future management plans.

Stand survey work is necessary to guage the balance between W10 and W15 areas to assess the current position and monitor future changes.

Short term management Objectives for the plan period (5 years)

Minimum intervention during this current plan period, but look to make observations on the levels of sycamore and beech regeneration within the SSSI areas during 2019, in order to undertake any necessary removal works in the period 2019-2023

5.2 Informal Public Access

Description

An extensive network of permissive and public paths, totalling several kilometres, provides informal access routes through most of the woodland (see maps) with a total of 14 entrances. These paths are linked via public footpaths both to the nearby city of Sheffield and to the countryside beyond, making the woodlands ideal for enjoyable, moderate length walks on the urban fringe. The woods have a surprisingly natural, wild feel and are an ideal place to escape the bustle of the city.
A programme of footpath/permissive bridleway improvements were carried out in 2006: including the surfacing of 750m of route in Nor Wood and Owler Car and the installation of one pedestrian bridge and 3 horse/pedestrian bridges to make safe stream crossings and reduce erosion of ground flora throughout. A circular permissive riding route is now established through these woods and neighbouring land with additional links to Owler Car Lane.

Significance

Increasing enjoyment of woodland is one of the Trust key outcomes. Encouraging access to these woods is particularly important given the excellent network of paths which currently link the site with the city and the wider countryside.

Opportunities & Constraints

Constraints:
The site is naturally wet with numerous spring-lines and seeps arising from the porous sandstone layers. Many paths are therefore wet and muddy for much of the year making access for wheelchairs and pushchairs impossible.

The site is steep in places which can create erosion problems along paths.

The relatively isolated nature of the woodlands together with very limited parking opportunities make any increase in useage of the site unlikely.

Opportunities:
Access improvements were carried out in 2006 for riders and walkers.

There are opportunities for working more closely with neighbours (particulaly Sheffield Willdife Trust who manage the adjacent Long Wood) to manage access issues.

Factors Causing Change

Unauthorised horse riding, Wet ground conditions

Long term Objective (50 years+)

The long term vision for public access is to improve and then maintain the exisitng network of paths and rides for the purposes of quiet, informal recreation.
Improvement to paths (including possible surfacing of horse riding routes) although necessary given poor ground conditions, must not compromise the biodiversity value of the woodlands.

Short term management Objectives for the plan period (5 years)

Maintain the surfaced paths and tracks and 4x bridge crossings on at least one occasion during the current plan period. Maintain welcome signs (x6), stiles (x2) at least once annually. Liaise with Sheffeild Wildlife Trust, local authorities, horse riders and other interested parties to resolve any reported issues of unauthorised horse riding.

5.3 Planted Ancient Woodland Site

Description

Sub-compartments 1b, 1e , 3b and 3c consist of a mix of broadleaves and conifers - larch and Corsican pine. Focus within these compartments is to favour the broadleaf component in the ongoing PAWS restoration process . Canopy cover is dense in places and affecting ground flora through shading. Native broadleaf regeneration is also present: this will be favoured in thinning to move towards a more native standtype.

The W15 beech community, found in 2b and 3a, and to a lesser extent 2a, makes up the majority of Nor and Owler Car woods and over half of Cookspring wood. The natural British range of this woodland type is best represented in the Weald, the New Forest and on the Chiltern plateau. Planted stands, such as this, are almost indistinguishable in their floristics from these natural stands and are characteristically found along the Pennine fringe. The Deschampsia flexuosa sub-community (W15b) has frequent native Quercus spp with hybrids and an abundant under canopy of regenerating beech, holly and, more rarely, rowan. The ground layer is dominated by Pteridium aquilinium (at this site confined to 'patches'), Holcus mollis, Rubus fruticosus, Dryopteris spp and numerous bryophytes which at this site include Mnium hornum, Dicranella heteromalla, Dicranum scoparium and Hypnum cupressiforme.

Sub-compartments 1c and 1d are planted with sycamore and red oak respectively. Focus within these compartments is to favour the native broadleaf component in the ongoing PAWS restoration process . Ground flora is generally sparse. Native broadleaf regeneration is also present: this will be favoured in thinning to move towards a more native standtype.

Significance

Planted Ancient Woodland Sites (PAWS) are a rich habitat for wildlife, and hold ecological and archaelogical value from their ancient woodland origin. Through maintaining and enhancing remnant woodland features under threat this habitat can be secured for the long term.

Opportunities & Constraints

Non native conifers can have a negative impact on the ecology of ancient woodland through the amount of shade and leaf litter they cast on remnant features. By reducing immediate threats to their survival, PAWS restoration will be carried out, this will require phased operations of gradual thinning and selective thinning until the woodland complex is fully restored and managed as high forest.

Because of the dominance of beech in the woodlands, it is accepted that a return to a regionally characteristic oak dominated stand will not be possible. The dominance of the W15b community is therefore a constraint in that it effectively prevents the Trust from returning the woodland to one dominated by regionally native trees.

As the woodlands are well visited and popular, any operations which will be likely to transform the internal landscape are likely to be un-popular. The Trust is therefore constrained in its efforts to remove non-native conifers. Conifers must be gradually thinned to favour regenerating broadleaves.

There is difficult management access to much of the site due to the steep slopes and muddy conditions. This makes extraction uneconomic due to associated damage to the path network, watercourses and cultural heritage features. Future silvicultural operations will probably be felling without extraction.

There are opportunites to enhance the biodiversity value and internal landscape of the woodland by, selective thinning of conifers and non native broadleaves, rideside widening and scalloping and streamside coppicing where these can be achieved through existing PAWS operations.

Factors Causing Change

Natural Regeneration Of sycamore, beech, occasional conifers and native broadleaves - including holly. Squirrel Damage, occasional deer damage

Long term Objective (50 years+)

The long term vision is to create an uneven aged, broadleaved, high forest woodland, retaining and enhancing botanical, faunal and historic interest. The coniferised PAWS areas will be managed as a priority, with sub-compartments containing beech, sycamore and other non-native broadleaves selectively felled where appropriate, as a way of reducing their dominance relative to oak and other native broadleaves and allowing native natural regeneration to develop. It is, however, accepted that beech is likely to remain a major stand component

Short term management Objectives for the plan period (5 years)

Within the current plan period, 2018-2023 undertake a clear fell of the sub-compartments of larch and Corsican pine in 1b and 1e, utilising the windblown areas wherever possible to create canopy gaps. Undertake further thinning operation in 2a, 2b, 3a, 3c and 1a in the period between 2020 and 2024, focussing on the removal of over-mature beech within Cpt. 2b & 3a and the thinning of larch, holly and sycamore from within Cpt. 3b & 3c, to promote increased light levels and natural regeneration to create a more un-even age structure.

6.0 WORK PROGRAMME

Year	Type of Work	Description	Due By

APPENDIX 1: COMPARTMENT DESCRIPTIONS

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Key Features Present	Designations
1a	6.72	other oak spp	1871	PAWS restoration	Archaeological features, Mostly wet ground/exposed site, No/poor vehicular access within the site	Ancient Semi Natural Woodland, Informal Public Access, Planted Ancient Woodland Site	Ancient Semi Natural Woodland, Planted Ancient Woodland Site, Site of Local Nature Conservation Importance, Tree Preservation Order
The bulk of Nor Wood is formed of mixed broadleaved ancient woodland (NVC W10 Quercus robur-Pteridium aquilinium-Rubus fructicosus woodland) with the main tree species being hybrid oak (Quercus spp) roughly at 60% of the canopy. Minor stand components include ash,beech, sycamore, wild cherry and holly. Where the beech has been planted the NVC type veers towards W15b (Fagus sylvatica-Rubus fructicosus woodland) in an intimate mix with W10. It is possible that the wood is undergoing a natural succession to a more beech dominated canopy since its planting on site, and this may speed up with projected climate change. The sycamore has been planted in more distinct small single species coupes. The nominal planting age for the planted trees is 1871. Regeneration of all the tree species is present, although it should be noted that sycamore regeneration is not significant enough for concern at this time. The ground flora is dominated by creeping soft grass, bluebells, buckler ferns (Dryopteris spp.), bramble and locally bracken. Under dense beech canopy the ground flora is characteristicaly species poor with frequent bare ground under a deep litter layer. Drainage is locally poor on the heavier waterlogged clays and this has an impact on the permissive foot and bridle paths.							
1b	2.45	Hybrid larch	1970	High forest	Archaeological features, Mostly wet ground/exposed site, No/poor vehicular access within the site	Ancient Semi Natural Woodland, Informal Public Access, Planted Ancient Woodland Site	Planted Ancient Woodland Site, Site of Local Nature Conservation Importance, Tree Preservation Order

Planted stands of beech and hybrid larch mixtures p1970. The composition is roughly 70% larch and 30% beech after the last thinning a couple of years ago although other broadleaves are present in small numbers throughout, particularly birch and holly. The previous thinnings have been very haphazard (with over and under thinning)and a wide variation in the development of each stand is present. The beech tends to be severely suppressed and has suffered some fairly significant squirrel damage/ windblow and snowbreak. The area down towards the Moss Burn is particularly badly hit by windblow and snow break to both species. Ground flora is restricted and tends to be dominated by bramble since the last thinning was carried out. Areas are affected by poor drainage on clay soils.							
1c	0.17	Sycamore	1970	High forest	Archaeological features, Mostly wet ground/exposed site, No/poor vehicular access to the site, No/poor vehicular access within the site	Ancient Semi Natural Woodland, Informal Public Access, Planted Ancient Woodland Site	Planted Ancient Woodland Site, Site of Local Nature Conservation Importance, Tree Preservation Order
Small stand of young sycamore p1970. The understorey is generally species poor but there are smalll localised patches of bluebell and associated plants affected by incresing shade levels. Frequent windblow and snow break has occurred in the past and also squirrel damage but not as intense as in the young beech stands. Adjoins the Moss Burn on the north side.							
1d	0.30	other oak spp	1970	High forest	Archaeological features, Mostly wet ground/exposed site, No/poor vehicular access to the site, No/poor vehicular access within the site	Ancient Semi Natural Woodland, Informal Public Access, Planted Ancient Woodland Site	Planted Ancient Woodland Site, Site of Local Nature Conservation Importance, Tree Preservation Order
A small stand of beech and red oak p1970. The species are in rough balance although the beech is poor as in the rest of the cpt being suppressed and particularly prone to squirrel damage. As in other young stands in cpt1, this stand has suffered in the past from snowbreak and snowbend. Ground flora is species poor and underdeveloped. The stand borders the Moss Burn on its north edge.							

1e	0.43	Corsican pine	1970	High forest	Mostly wet ground/exposed site, No/poor vehicular access to the site, No/poor vehicular access within the site	Ancient Semi Natural Woodland, Informal Public Access, Planted Ancient Woodland Site	Planted Ancient Woodland Site, Site of Local Nature Conservation Importance, Tree Preservation Order
A small stand of corsican pine p1970 in the northeast corner of cpt 1 adjacent to the Moss Burn. It has been previously thinned to varying degrees and like the other young stands in cpt it has suffered some degree of windblow and snowbreak. In some areas there is a significant amount of natural regeneration of broadleaved species, especially birch and some cherry. Ground flora is poorly developed.							
2a	1.59	Oak (sessile)	1920	High forest	Gullies/Deep Valleys/Uneven/ Rocky ground, No/poor vehicular access to the site, No/poor vehicular access within the site	Ancient Semi Natural Woodland, Informal Public Access, Planted Ancient Woodland Site	Ancient Semi Natural Woodland, Site of Local Nature Conservation Importance, Site of Special Scientific Interest, Tree Preservation Order
This area of dry oak woodland forms part of the Moss Valley Woods SSSI : one of the least modified areas of oak woodland in Derbyshire. The canopy is dominated by oak with scattered ash, rowan and cherry with a well developed understorey of hazel, hawthorn and holly (NVC W10). The sycamore element was removed in a previous thinning and regeneration is controlled as it arises during routine maintenance works. The field layer consists of areas of bramble and bracken with other woodland plants such as honeysuckle, bluebell, male fern and wood sorrel. The wetter streamside areas contain species such as opposite leaved golden saxifrage. The variety of native trees and shrubs of different size and age, including overmature and dead timber, and flowering plants in open areas and on damper ground along the streamsides provides important habitats for invertebrates. This woodland is also important for woodland birds.							

2b	5.68	Beech	1850	High forest	Archaeological features, Gullies/Deep Valleys/Uneven/ Rocky ground, Mostly wet ground/exposed site, No/poor vehicular access to the site, No/poor vehicular access within the site	Ancient Semi Natural Woodland, Informal Public Access, Planted Ancient Woodland Site	Ancient Semi Natural Woodland, Planted Ancient Woodland Site, Site of Local Nature Conservation Importance, Tree Preservation Order
Cpt2b comprises the area of Cookspring Wood that lies outwith the SSSI. It is a varied stand of mixed broadleaves planted in 1850 intermixed with ancient woodland remnants and a wide age range of natural regeneration. The main tree species are beech roughly 47%, oak hybrids 16%, with birch, cherry, sycamore, rowan, sweet chestnut hazel, holly and the very occaisional ash, larch and scots pine. Localised patches are sycamore dominated. Natural regeneration is scatterred throughout and consists of mostly beech and sycamore with holly and sparse oak. NVC types are as for Cpt 1A vaying between W10 under oak dominated areas and W15b under the beech. The Moss Burn forms the northern boundary which is characterised by an unstable and fluid system of meanders which erode into the wood as they change course. The soils tend to have impeded drainage which affects footpaths and horseriding routes within the wood.							
3a	8.90	Beech	1850	High forest	Archaeological features, Gullies/Deep Valleys/Uneven/ Rocky ground, Mostly wet ground/exposed site, No/poor vehicular access within the site, Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc	Ancient Semi Natural Woodland, Informal Public Access, Planted Ancient Woodland Site	Ancient Semi Natural Woodland, Site of Local Nature Conservation Importance, Site of Special Scientific Interest, Tree Preservation Order

Cpt 3a is a varied stand of mixed broadleaves planted in 1850 intermixed with ancient woodland remnants and a wide age range of natural regeneration. The main tree species are beech roughly 50% which is widespread and dominant, oak hybrids 18%, with birch, cherry, sycamore 15%, rowan, sweet chestnut hazel, holly and the occaisional ash, larch and scots pine. Locally, patches are dominated by dense holly in the understorey under mature beech. Natural regeneration is scatterred throughout and consists of mostly beech and sycamore with holly and sparse oak. NVC types are as for Cpt 1A vaying between W10 under oak dominated areas and W15b under the beech. This compartment has been extensively surveyed for archaeological remains which has exposed an early industrial landscape composed of white coal hearths for lead smelting in the 17th century, charcoal hearths and ancient coppice stools (see conservation map).The streamside banks that run along the western edge of the compartment, along with Cookspring Wood and the neighbouring Whinacre Wood, form part of the Moss Valley Woodlands SSSI (see cpt 2A).							
3b	0.47	Corsican pine	1970	High forest	Archaeological features, Gullies/Deep Valleys/Uneven/ Rocky ground, No/poor vehicular access to the site, No/poor vehicular access within the site	Ancient Semi Natural Woodland, Informal Public Access, Planted Ancient Woodland Site	Planted Ancient Woodland Site, Site of Local Nature Conservation Importance, Tree Preservation Order
A small stand of corsican pine p1970. Thinned in 1997 to varying degrees. Left fairly underthinned in areas adjacent to the stream on the north boundary. A small percentage of oak (5%) is scattered through with light advance regeneration of birch and beech becoming apparent where there is sufficient light. In 2005 through PAWS restoration some scattered thin to waste had been carried out within the cpt.							
3c	3.87	Hybrid larch	1970	High forest	Archaeological features, Gullies/Deep Valleys/Uneven/ Rocky ground, Mostly wet ground/exposed site, No/poor vehicular access to the site, No/poor vehicular access within the site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc	Ancient Semi Natural Woodland, Informal Public Access, Planted Ancient Woodland Site	Planted Ancient Woodland Site, Site of Local Nature Conservation Importance, Tree Preservation Order

A group of several stands of beech and hybrid larch p1970 planted through the mature broadleaved matrix. The proportion of both species varies greatly within and between the stands due to an uneven thinning in 1997. In many areas the beech is poor and suppressed there are also small elements of young oak and other broadleaved regeneration throughout. The stands are prone to varying degrees of wind damage although to the same extent as cpt 1, and squirrel damage is endemic on the beech.

Appendix 2: Harvesting operations (20 years)

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2020	1a	Thin	6.71	20	135
2020	1b	Clear Fell	2.45	33	80
2020	1c	Thin	0.17	29	5
2020	1d	Thin	0.29	34	10
2020	1e	Clear Fell	0.43	47	20
2021	2b	Thin	5.60	30	170
2021	3a	Thin	4.30	42	182
2021	3b	Selective Fell	0.47	43	20
2021	3c	Thin	3.88	31	120
2028	2b	Thin	5.60	30	170
2028	3a	Thin	4.30	42	182
2028	3c	Thin	3.88	31	120
2036	1a	Thin	6.71	20	135
2036	1b	Clear Fell	2.45	8	20
2036	1c	Thin	0.17	59	10
2036	1d	Thin	0.29	52	15
2036	1e	Thin	0.43	12	5

GLOSSARY

Ancient Woodland

Ancient woods are defined as those where there has been continuous woodland cover since at least 1600 AD. In Scotland ancient woods are defined strictly as sites shown as semi-natural woodland on the 'Roy' maps (a military survey carried out in 1750 AD, which is the best source of historical map evidence) and as woodland all subsequent maps. However, they have been combined with long-established woods of semi-natural origin (originating from between 1750 and 1860) into a single category of Ancient Semi-Natural Woodland to take account of uncertainties in their identification. Ancient woods include Ancient Semi-Natural Woodland and plantations on Ancient Woodland Sites (see below). May support many species that are only found in ancient woodland.

Ancient Semi - Natural Woodland

Stands in ancient woods defined as those consisting predominantly of native trees and shrubs that have not obviously been planted, which have arisen from natural regeneration or coppice regrowth.

Ancient Woodland Site

Stands in ancient woods that have been converted to plantations, of coniferous, broadleaved or mixed species, usually for timber production, including plantations of native species planted so closely together that any semi-natural elements of the understorey have been suppressed.

Beating Up

Replacing any newly planted trees that have died in the first few years after planting.

Broadleaf

A tree having broad leaves (such as oak) rather than needles found on conifers (such as Scots pine).

Canopy

The uppermost layer of vegetation in a woodland, or the upper foliage and branches of an individual tree.

Clearfell

Felling of all trees within a defined area.

Compartment

Permanent management division of a woodland, usually defined on site by permanent features such as roads. See Sub-compartments.

Conifer

A tree having needles, rather than broadleaves, and typically bearing cones.

Continuous Cover forestry

A term used for managing woods to ensure that there are groups or individual trees of different ages scattered over the whole wood and that some mature tree cover is always maintained. Management is by repeated thinning and no large areas are ever completely felled all at once.

Coppice

Trees which are cut back to ground levels at regular intervals (3-25 years).

Exotic (non-native) Species

Species originating from other countries (or other parts of the UK) that have been introduced by humans, deliberately or accidentally.

Field Layer

Layer of small, non-woody herbaceous plants such as bluebells.

Group Fell

The felling of a small group of trees, often to promote natural regeneration or allow planting.

Long Term Retention

Discrete groups of trees (or in some cases single trees) that are retained significantly past their economic felling age. Operations may still be carried out within them and thinning is often necessary to maintain stability.

Minimum Intervention

Areas where no operations (such as thinning) will take place other than to protect public safety or possibly to control invasive exotic species.

Mixed Woodland

Woodland made up of broadleaved and coniferous trees.

National vegetation classification (NVC)

A classification scheme that allows an area of vegetation to be assigned to the standardised type that best matches the combination of plant species that it contains. All woodlands in the UK can be described as being one of 18 main woodland types (W1 - W18), which principally reflect soil and climatic conditions. For example, Upland Oakwoods are type W11, and normally occur on well drained infertile soils in the cooler and wetter north and west of Britain. Each main type can be subdivided into numerous subtypes. Most real woods contain more than one type or sub-type and inevitably some woods are intermediate in character and can't be properly described by any sub type.

Native Species

Species that arrived in Britain without human assistance.

Natural Regeneration

Naturally grown trees from seeds falling from mature trees. Also regeneration from coppicing and suckering.

Origin & Provenance

The provenance of a tree or seed is the place where seed was collected to grow the tree or plant. The origin is the geographical location within the natural range of a species from where seeds/tree originally derives. Thus an acorn collected from a Turkey oak in Edinburgh would have an Edinburgh provenance and a southern European origin.

Re-Stocking

Re-planting an area of woodland, after it has been felled.

Shrub Layer

Formed by woody plants 1-10m tall.

Silviculture

The growing and care of trees in woodlands.

Stand

Trees of one type or species, grouped together within a woodland.

Sub-Compartment

Temporary management division of a compartment, which may change between management plan periods.

Thinning

The felling of a proportion of individual trees within a given area. The remaining trees grow to fill in the space created.

Tubex or Grow or Tuley Tubes

Tubes placed over newly planted trees or natural regeneration that promote growth and provide protection from animals such as rabbits and deer.

Weeding

The control of vegetation immediately around newly planted trees or natural regeneration to promote tree growth until they become established. Either by hand cutting or with carefully selected weed killers such as glyphosate.

Windblow/Windthrow

Trees or groups of trees blown over (usually uprooted) by strong winds and gales.